

THE NYMPHS OF TWO SPECIES OF CHERMIDÆ
(HEMIPTERA)

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On a preceding page of this journal Mr. E. P. Van Duzee has described the adults of two species of Chermids. Through the kindness of Mr. Van Duzee I have been enabled to examine nymphs of these two species and their descriptions are herewith presented. This paper is in effect one of a series in which it is proposed to deal with the immature stages of this family. An explanation of the point of view and of the methods involved in these papers will be found in another of the series¹.

The almost total absence of detailed studies on the immature stages in this family is responsible for the fact that certain structures which occur in some of the members of the family and which appear to be peculiar to them have no name. It is no part of my desire to multiply terms unnecessarily, but in the case of certain of these structures an ordinary descriptive phrase is entirely too clumsy.

There are present on the nymphs of many of the species in the Triozinæ certain seta-like structures which are of peculiar character. Morphologically they are apparently setæ as they arise from a socket but they are distinguished by the fact that at some distance from the base they decrease sharply in diameter, this constriction giving them a jointed appearance. They are associated with the production of wax and upon them as a support, if not from them as a point of origin, rise the slender filaments of wax that are a more or less distinctive feature in the nymphs of this subfamily. To these structures I am applying the term *sectaseta*. I know of no other group in which structures exactly equivalent to these occur.

KUWAYAMA LAVATERÆ Van Duzee

Fig. 1.

Specimens examined: Nymphs of all stages from *Lavatera assurgentiflora*, near Golden Gate Park, San Francisco, California, November 26, 1923 (E. P. Van Duzee).

Nymphal stages: The material at hand contains specimens clearly representing five stages. As this agrees with the number known in other species of the family it may be assumed that these are all.

¹ Ferris, G. F. Observations on the Chermidæ, Part I. Canadian Entomologist, 55:250, 1923.

Fifth stage: Length 1.8 mm. Form regularly oval, the head, however, across its posterior portion and the abdomen at the base narrower than the wing pads, so that the continuity of margin is interrupted at these points. Wing pads produced cephalad nearly to the anterior margin of the eyes. Dorsum quite heavily chitinized, the abdomen composed for the most part of a single plate, with a narrow, medially interrupted, plate at the joint between abdomen and thorax. Entire margin of the body, except for the eyes, beset with a continuous series of sectasetæ, these (Fig. 1B) quite slender and borne upon distinct prominences; dorsum likewise thickly beset with sectasetæ, those on the abdomen arranged in segmental series. Derm over the entire dorsum also thickly beset with minute points (Fig. 1B) except for a series of small areas on the abdomen where these give way to peculiar, minute, fringed processes (Fig. 1D).

Ventral side membranous throughout except for a faintly chitinized marginal zone, the anal area, a small area about each spiracle except the first pair and faint submedian areas; the derm of the abdomen beset, like the dorsum, with minute points. Antennæ (Fig. 1C) four-segmented, the first two segments very short, the other two quite long and each bearing two small sensoria. Legs without trochanter; with the division between tibia and tarsus distinct; claws present, the pulvillus quite large and triangular (Fig. 1E). Anal opening set well in from the apex of the body, the outer circum-anal pore ring consisting of a single row of slit-like pores, the inner ring consisting of an irregular row of small circular pores (Fig. 1H).

Fourth stage: Length 1.1 mm. In general characters practically identical with the fifth; differing in having the antennæ (Fig. 1E) but three-segmented, the third segment very large, and with three small sensoria, and in lacking the division between tibia and tarsus. There is a slight reduction in the number of sectasetæ.

Third stage: Length .7 mm. Like the fourth stage but with only two sensoria on the third segment of the antennæ. The sectasetæ fewer and proportionately much larger as they remain nearly of the same size as in the fifth stage.

Second stage: Length .45 mm. Antennæ but two-segmented (Fig. 1G), the first segment very short, the second relatively very large and bearing a single sensorium. Sectasetæ still fewer, those on the abdomen arranged for the most part in distinct longitudinal rows.

First stage: Length .3 mm. Antennæ as in the second stage but with the first segment very small and obscure. Rudiments of the wing pads represented each by a chitinous plate, these plates meeting at the meson, but not extending beyond the margins. Dorsum of the abdomen differing markedly from the other stages, the segments sharply divided from each other. Sectasetæ very much reduced in number, there being but one at the lateral margin of each segment, except the last, and four in a row across the segment.

APHALARA MARTINI Van Duzee

Fig. 2.

Specimens examined: From *Frankenia grandifolia*, Long Beach, July 20, 1923 (E. Bethel), and the same host, Pittsburg, California, December 1, 1923 (E. P. Van Duzee). Nymphs of all but the first stage present.

Nymphal stages. Fifth stage (Fig. 2A): Length 1.3 mm. Elongate; the wing pads projecting from the side of the body but not produced cephalad; eyes rather prominent and extending beyond the contour of the head. All setæ of the dorsal side and the margins short, stout and somewhat lanceolate (Fig. 2C).

Antennæ borne at the margin of the head, three-segmented, the first two segments quite short, together scarcely more than a third as long as the third segment, all the segments with a few lanceolate setæ and devoid of sensoria.

Dorsum with the derm for the most part chitinous, the chitinization broken up into numerous plates which are arranged as follows: head with a pair of large plates and each segment of thorax with a pair of large and several smaller plates, the large plates of both head and thorax separated mesally and bearing a row of lanceolate setæ along the mesal margin. Wing pads with a marginal row of lanceolate setæ and a few such setæ over the surface. Abdomen with a pair of mesally separated, narrow plates on each of the first four segments and with the remainder of the surface, consisting apparently of four segments, composed of a pair of mesally separated plates which show some traces of segmentation; all of the plates with lanceolate setæ along the mesal margin, a few over the surface and at the lateral margin. Derm (Fig. 2B) somewhat vermiculate.

Ventral side membranous throughout except for a small plate at the base of each antennæ, one at the eye, an irregular apical area and a small plate about each spiracle. All of these chitinized areas are beset with fine points (Fig. 2F). Legs without trochanter; with the division between tibia and tarsus distinct; pulvillus a sub-circular pad (Fig. 2E). Anal opening set well in from the apex of the body, the outer circum-anal pore ring consisting of a single row of slit-like pores (Fig. 2G), the inner ring consisting of an irregular row of small, circular pores.

Fourth: Length .7 mm. What appears to be the fourth stage differs from the fifth chiefly in the smaller size, in the presence of but two segments in the antennæ (Fig. 2D) and the absence of a tibio-tarsal joint.

Third stage: Length .7 mm. Apparently differing from the fourth only in size.

Second stage: Length .5 mm. Apparently differing from the third only in size and in the smaller wing pads.